(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 2 June 2005 (02.06.2005)

PCT

(10) International Publication Number WO 2005/048885 A1

(51) International Patent Classification7: A61L 27/58, 27/56, 27/18

A61F 2/28,

(21) International Application Number:

PCT/SG2004/000380

(22) International Filing Date:

22 November 2004 (22.11.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/524,278

21 November 2003 (21.11.2003) US

(71) Applicant (for all designated States except US): NA-TIONAL UNIVERSITY OF SINGAPORE [SG/SG]; 10 Kent Ridge Crescent, Singapore 119260 (SG).

(72) Inventors; and

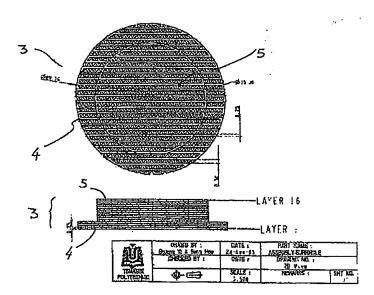
(75) Inventors/Applicants (for US only): TEOH, Swee Hin [SG/SG]; 22 Toh Yi Road, Singapore 596504 (SG). TAN, Kim Cheng [SG/SG]; Blk 856D Tampines Street 82#12-180, Singapore 524856 (SG). HUTMACHER, Dietmar

[DE/SG]; 48 Toh Tuck Road, #03-07 Signature Park, Singapore 596739 (SG). LIM, Thiam Chye [MY/SG]; 1 Jalan Anak Bukit, #08-01 Sherwood Tower, Singapore 588996 (SG). SCHANTZ, Jan-Thorsten [DE/SG]; 43 Hume Avenue, #08-01 Symphony Heights, Singapore 598739 (SG). CHOU, Ning [SG/SG]; 18 Bo Seng Avenue, Singapore 309810 (SG).

- (74) Agent: MATTEUCCI, Glanfranco; Lloyd Wise, Tanjong Pagar, P.O. Box 636, Singapore 910816 (SG).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: BIOABSORBABLE PLUG IMPLANTS AND METHOD FOR BONE TISSUE REGENERATION



(57) Abstract: A bioabsorbable plug implant, suitable for bone tissue regeneration, comprising a first portion, and a second portion extending outwardly from the first portion, the first and second portions formed from expandable material. A method for bone tissue regeneration comprising the steps of: providing a bioabsorbable plug implant, wherein the implant comprises a first portion and a second portion extending outwardly from the first portion, the first and second portions formed from expandable material; inserting the second portion into a defect or gap of a bone, the first surface engaging the outside contour of the defect or gap; allowing the plug implant to contact body fluids, thereby expanding the size of the plug implant so that the plug fits into the defect or gap.

European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.